

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1-40. (Canceled)

41. (Currently amended) An isolated nucleic acid encoding a polypeptide comprising an alpha subunit of a KCNQ potassium channel, wherein said polypeptide forms, with at least one additional KCNQ alpha subunit, a KCNQ potassium channel having the characteristic of voltage-gating; and wherein said polypeptide comprises an amino acid sequence at least 90% identical to of SEQ ID NO:5.

42-43. (Canceled)

44. (Previously presented) The isolated nucleic acid of claim 41, wherein said nucleic acid has a nucleotide sequence selected from the group consisting of SEQ ID NO:1, SEQ ID NO:2, and SEQ ID NO:3.

45. (Previously presented) The nucleic acid of claim 41, wherein the polypeptide encoded by the nucleic acid comprises an alpha subunit of a homomeric potassium channel.

46. (Previously presented) The nucleic acid of claim 41, wherein the polypeptide encoded by the nucleic acid comprises an alpha subunit of a heteromeric potassium channel.

47. (Previously presented) An expression vector comprising a nucleic acid of claim 41.

48. (Currently amended) A An isolated host cell transfected with the vector of claim 47.